ARCO Alaska, Inc.
Post Office Box 100360
Anchorage, Alaska 99510
Telephone 907 276 1215

ARCO Kuparuk P. Bay

August 23, 1985

RECEIVED
AUG 28 1985
AIR PROGRAMS
BRANCH

Mr. Douglas L. Lowery
Regional Environmental Supervisor
Northern Regional Office
Alaska Department of
Environmental Conservation
Pouch 1601
Fairbanks, AK 99701

Mr. Michael Johnston
Chief Air Operations Section
U.S. Environmental Protection
Agency
Region X
1200 Sixth Avenue
Seattle, WA 98101

SUBJECT: 1985 Kuparuk River Unit Air Compliance Testing Schedule Confirmation

Dear Sirs:

The preliminary test plan for the 1985 Air Compliance Testing for the Kuparuk River Unit was submitted for your approval on May 1, 1985. At this time, we are submitting the finalized test plan. The test of the KRUTP crude heater is scheduled to commence immediately following the completion of the air compliance testing in the Prudhoe Bay Unit. The anticipated test date is Friday, September 6, 1985.

If we can provide you with any further information on the schedules or testing, please contact me at (907) 263-4307.

Sincerely,

J. A. Ives
Sr. Regulatory Compliance Engineer

JAI2:tlh-20037

Attachment

cc: J. Coutts, ADEC-Fairbanks - w/attachment
R. Nye, EPA-Region X-Seattle - w/attachment
K. Pazero, EPA-Juneau - w/attachment
L. Verrelli, ADEC-Juneau - w/attachment

PETRO
CHEM
ENVIRONMENTAL
SERVICES

A Division of Cal State Electric Inc.

SOURCE TEST PLAN

I. Client:

Kuparuk River Unit Owners Represented By:
ARCO ALASKA INCORPORATED
PO Box 100360
Anchorage, Alaska 99510

Attention: Jim Ives (907) 263-4307

II. Testing Firm:

Petro-Chem Environmental Services
3207 Antonino Avenue
P. O. Box 5126

Attention: Leslie Johnson
(805) 327-7300

III. Unit To Be Tested:

One (1) 44.44 MMBTU/hr. Bohn Heater (Arco tag # G1-14-01). The unit will be operating on gas for a fuel, with a normal heat release approximately 35.56 MMBTU/hr.

IV. Procedures:

Determination of NOx, and O_2 concentrations and emissions from the 44.44 MMBTU/hr heater located in Kuparuk River Alaska. Monitoring of NOx, and O_2 will be by continuous monitoring analyzers (see attachment A) and documented with an analog strip chart recorder. Three, forty minute test runs will be conducted at each unit with zero and span calibrations before and after each test. During each test the units operation parameters will be monitored to document its load capacity. An oxygen traverse will be performed on all turbines and heaters to determine test run sampling points. If upon completion of the oxygen traverse, no deviation is found, single point sampling will be done on the heater.

PETRO
CHEM
ENVIRONMENTAL
SERVICES

Procedures Cont.

Volume flows and operating conditions of each unit will be calculated using the process conditions which are documented, and will be made available, by the process engineer. A gas sample will be taken for each unit and analyzed by ARCO's Laboratory. If the available information does not satisfy EPA Region X DEC, EPA Method 2, 3, and 4, will be performed to document volume flows.

The analyzers which are to be used for testing are:

Thermo-Electron, Model 10;
Chemiluminescent NO/NOx Analyzer
Serial No: 10A-R-17380

Teledyne Instruments, Model 320-AX
Fuel Cell O_2 Analyzer
Serial No: 50840

Testing Dates: September 6 or 7 1985

Attachment A

CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)

Reference: BAAQMD, Manual of Procedures; ST-13A, St-19A, Jan 1982 State of California, Air Resources Board, Test Methods 1-100, June 1979 CRF 40 parts 53 to 80, Test Methods 7E and 20, 1985.

INSTRUMENTATION SUMMARY:

A constant sample of flue gas was extracted, dried, filtered, and delivered to an instrument manifold system for distribution to one or more analyzers. Instrument results are recorded on an analog strip chart recorder. System calibration checks are performed at the beginning and end of each day as well as calibration check at the beginning and end of each test run. Final data reduction includes zero and calibration drift corrections.

SAMPLE CONDITIONING SYSTEM:

Consists of a borosilicate glass tube or 316 grade stainless steel probe fitted with a cindered stainless steel or pyrex glass wool particulate filter. The probe is fitted with a teflon (TFE) sample line which connects to a water condensation system located at the sources. The condensation system consists of three 500 ml glass impingers connected in a series, immersed in an ice bath. The gas is delivered to the instrument van with a teflon line (3/8"O.D.) through an in line Balston particulate filter drawn by a teflon coated diaphram pump. The sample system is leak checked prior to sampling by plugging the end of the sample probe and adjusting the sample pump to it's maximum rate (approximately 22" Hg). The manifold is bypassed and the leak rate monitored through a gas meter or low range flow meter.

MANIFOLD SYSTEM:

Sample gas is delivered to each analyzer through a five (5) way valve and regulated with a needle valve flowmeter. Manifold pressure is controlled by a back pressure regulator which is typically set at three (3) psi. Zero gas (N_2) and calibration gases are delivered to the analyzers using the same five-way valve and flowmeter. All manifold parts are glass, stainless steel, or teflon materials.

CALIBRATION PROCEDURES:

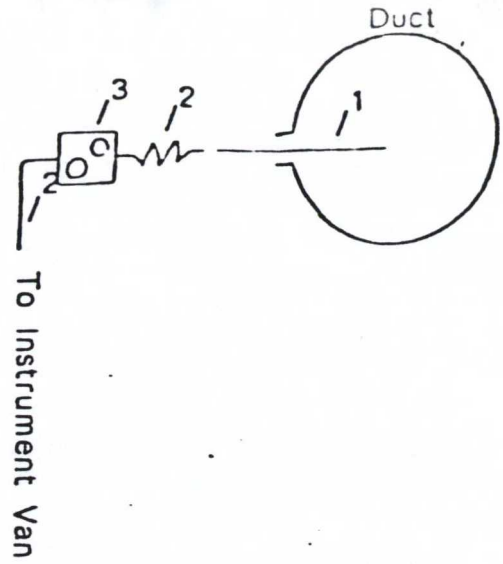
A. System Calibration Procedures:
System calibration checks are performed at the beginning and end of each test day to insure against sample system leaks or contamination. Calibration gas is introduced at the sample probe tip at a normal sample rate and vacuum, the final instrument value must be within ±5% of the calibration gas value.

B. Manifold Calibration:
Instrument calibration checks are performed and adjustments made before and after each test run. Each analyzer is checked with a zero grade nitrogen gas for a zero baseline and then with a calibration gas similar to the expected sample concentration (60-90% of full scale). Calibration gases used in both manifold and system calibrations are with EPA protocol No. 1 gas (traceable to National Bureau of Standards SRM,) or with gases recently analyzed by EPA Reference Methods. All zero and calibration checks are documented and noted on the recorder strip charts.

ANALOG STRIP CHART DATA REDUCTION:

Analog recordings were averaged of time increments as shown on the data pages (typically 5, 10, or 20 minute increments). Data for each incriment was recorded at an average percent of full scale. The readings were then compared with the zero and calibration readings for calculation of the average concentration for each time increment. Any deviation of the zero and calibration readings from the start to the end of a test period was corrected by calculating apparent zero and calibration readings for the mid-point or each time incriment. The average concentrations were then calculated from the sample readings and the apparent zero and span readings.

PNEUMATIC DIAGRAM



1) 316 Stainless Steel Probe
2) Teflon Sample Line
3) Sample Gas Conditioner
4) Filter
5) Teflon Coated Diaphram Pump
6) By-Pass Control Valve
7) Sample Flowmeter
8) Back-Pressure Regulator
9) 5-Way Gas Selection Valve
10) Instrument Flowmeter
11) Metering Valves